

THE INVENTION CLAIMED IS

1. A renewable mirror, comprising:  
  
a liquid,  
  
a penetrable unit, and  
  
a system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented.
2. The mirror of claim 1, wherein said penetrable unit is a porous unit.
3. The mirror of claim 1, wherein said penetrable unit is a porous substrate.
4. The mirror of claim 1, wherein said penetrable unit is a capillary substrate.
5. The mirror of claim 1, wherein said penetrable unit is planar.
6. The mirror of claim 1, wherein said penetrable unit is contoured.
7. The mirror of claim 1, wherein said penetrable unit is a figured porous substrate.
8. The mirror of claim 1, wherein said penetrable unit comprises holes extending through said penetrable unit.
9. The mirror of claim 8, wherein said holes are capillary size holes.
10. The mirror of claim 1, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented includes a system for moving said liquid relative to said penetrable unit so that said liquid is at least partially withdrawn through said penetrable unit

and for moving said liquid relative to said penetrable unit so that said liquid again provides a mirror.

11. The mirror of claim 10, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented is an actuating device for moving said liquid relative to said penetrable unit.

12. The mirror of claim 10, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented is a piston.

13. The mirror of claim 10, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented is an actuator and flexible membrane.

14. The mirror of claim 10, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented is a bellows.

15. The mirror of claim 10, wherein said system for operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented is a source of liquid pressure.

16. The mirror of claim 1, wherein said liquid is a liquid metal.

17. The mirror of claim 1, wherein said liquid is mercury.

18. The mirror of claim 1, wherein said liquid is gallium.

19. The mirror of claim 1, wherein said liquid is a NaK alloy (40 to 90% of K).

20. The mirror of claim 1, wherein said liquid is a conducting liquid.

21. The mirror of claim 1, wherein said liquid is a dielectric liquid.

22. The mirror of claim 1, wherein said liquid is an alcohol.

23. The mirror of claim 1, including electrodes situated over or under said liquid that change the shape of said liquid when a voltage is applied to said electrodes.

24. The mirror of claim 1, wherein said electrodes are ring electrodes.

25. A renewable mirror, comprising:

liquid means for producing a reflective unit,

penetrable means, and

means for operatively connecting said liquid to said penetrable means for providing a mirror that can be universally oriented.

26. The mirror of claim 25, wherein said penetrable means is a porous unit.

27. The mirror of claim 25, wherein said penetrable means is a porous substrate.

28. The mirror of claim 25, wherein said penetrable means is a capillary substrate.

29. The mirror of claim 25, wherein said penetrable means is planar.

30. The mirror of claim 25, wherein said penetrable means is contoured.

31. The mirror of claim 25, wherein said penetrable means comprises holes extending through said penetrable means.

32. The mirror of claim 31, wherein said holes are capillary size holes.

33. The mirror of claim 25, wherein said means for operatively connecting said liquid to said penetrable means for providing a mirror includes an actuating device for moving said liquid relative to said penetrable means.

34. The mirror of claim 33, wherein said actuating device includes a piston.

35. The mirror of claim 33, wherein said actuating device includes an actuator and flexible membrane.

36. The mirror of claim 33, wherein said actuating device includes a bellows.

37. The mirror of claim 25, wherein said liquid means is a conducting liquid.

38. The mirror of claim 1, wherein said liquid means is a dielectric liquid.

39. The mirror of claim 25, including electrodes situated at some distance from said liquid means that change the shape of said liquid means when a voltage is applied to said electrodes.

40. The mirror of claim 39, wherein said electrodes are ring electrodes.

41. A method of providing a renewable mirror, comprising  
providing a liquid for producing a reflective unit,  
providing a penetrable unit, and

operatively connecting said liquid to said penetrable unit to provide a mirror that can be universally oriented.

42. The method of providing a mirror of claim 41, wherein said step of providing penetrable unit comprises providing a porous substrate.

43. The method of providing a mirror of claim 41, wherein said step of providing penetrable unit comprises providing a planar substrate.

44. The method of providing a mirror of claim 41, wherein said step of providing penetrable unit comprises providing a contoured substrate.

45. The method of providing a mirror of claim 41, wherein said step of providing penetrable unit comprises providing a figured porous substrate.

46. The method of providing a mirror of claim 41, including moving said liquid relative to said penetrable unit so said liquid is refreshed.

47. The method of providing a mirror of claim 41, including changing the shape of said liquid by positioning electrodes relative to said liquid and energizing said electrodes.